# Work from Home during COVID 19 and Gender Differences in Twitter Content Analysis

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**Abstract.** In the introduction of this article, the authors of the paper present the current state of the job market in the European Union. There are several factors that will influence the structure of the future workforce: demographic changes, and changes caused by unpredictable crisis, such as COVID-19. It is evident from the presented statistics, that there are gender differences and risks influencing their job positions involved. The authors present the research oriented on the differences between genders and their attitudes toward working from home. A method of qualitative analysis of the tweets collected during the period of ten days was used. Data analysis was executed with the MAXQDA software. The results of the analysis did not prove the assumption that there are differences between genders.

**Keywords:** COVID-19, Working from home, Qualitative analysis, Twitter, Gender differences

## 1 Introduction

*"The only thing we know about the future is that it will be different." Peter F. Drucker*

Today, we are facing the biggest global crisis ever. It has influenced everything from the economy to education systems, from the way we move and shop to the way we work. No area in our lives has not been impacted by the COVID-19 crisis. However, the crisis has not had an equal gender impact.

### 1.1 Future labour market in the European Union

The European Union labour market will go through major changes in the next thirty years. In the (Chopin and Foucher, 2017), it was revealed how economic growth and

productivity are linked to key indicators in population figures. The report predicted that in 2050, North America should see its population rise by 75 million inhabitants (two times less than the number for South America), Europe of 28 (EU-28) could stagnate in 2050 at approximately 500 million people, while losing 49 million people of working age (20-64). That represents around 11 million potentially-active workers fewer in Germany, and 7 to 8 million fewer in Spain and Italy. Meanwhile, France will be content to catch up with Germany; something the United Kingdom will likely achieve even earlier.

To balance the decrease of the active workforce, the European Union can consider the following options (Cagáňová et al. 2017, Švač, Cagáňová 2020):

1. Internal and External sources of the workforce.
2. Bridging of the skills gap.
3. Increase of productivity.

As for the mobilisation of internal sources, EU is considering the following options (Cagáňová et al. 2017):

1. Prolongation of the retirement age.
2. More women in the labour process.
3. Stopping of the brain drain from individual countries.

According to (Manyika 2017), women represent one of the largest pools of untapped labour: globally, 655 million fewer women are economically active than men. Eliminating gender gaps in employment and wages would allow companies to make better use of the available talent pool, with potential growth implications.
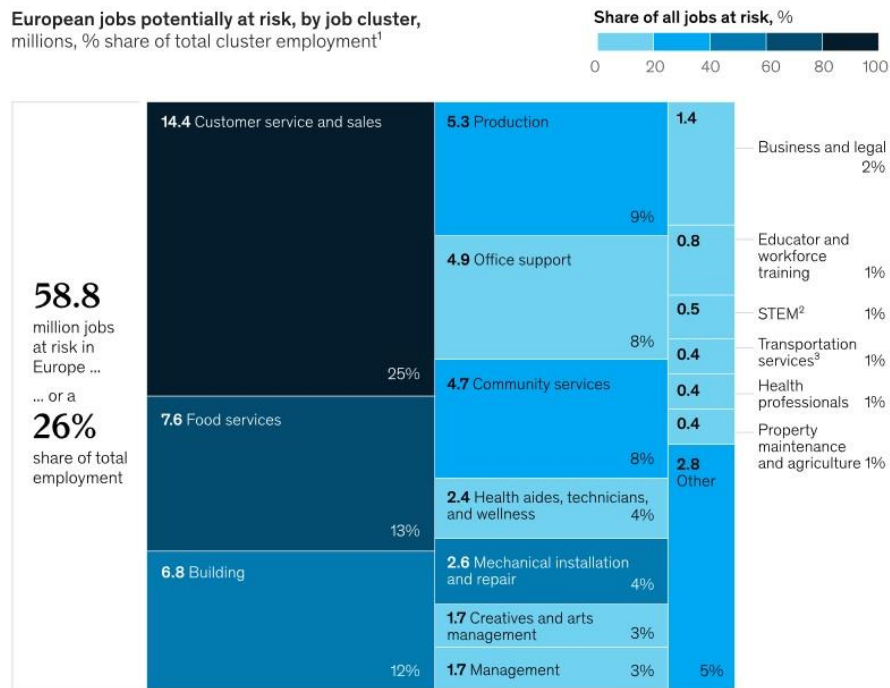
There is evidence that having women on boards and in senior management positions has a positive impact on companies" performance and profitability (Kochhar et al. 2017). One of the policy responses to the situation of the female labour force was the "Proposal for a Directive of the European Parliament and the Council on work-life balance" (European Commission 2017) the preconditions for a higher involvement of women in the labour market:

1. Maternity leave.
2. Paternity leave.
3. Parental leave.
4. Careers' leave.
5. Flexible working arrangements.

The COVID-19 crisis has fostered us to reconsider the existing workforce structure, mainly the women´s involvement in the labour market. In ILO Monitor (ILO 2020), among those workers significantly impacted by the crisis in the informal economy are women, overrepresented in high-risk sectors (42% of women workers are working in those sectors, compared to 32% of men)

In the formal economy, the high-risk jobs according to (Chinn et al. 2020) are customer services and sales, food service, building and others (see Figure 1).
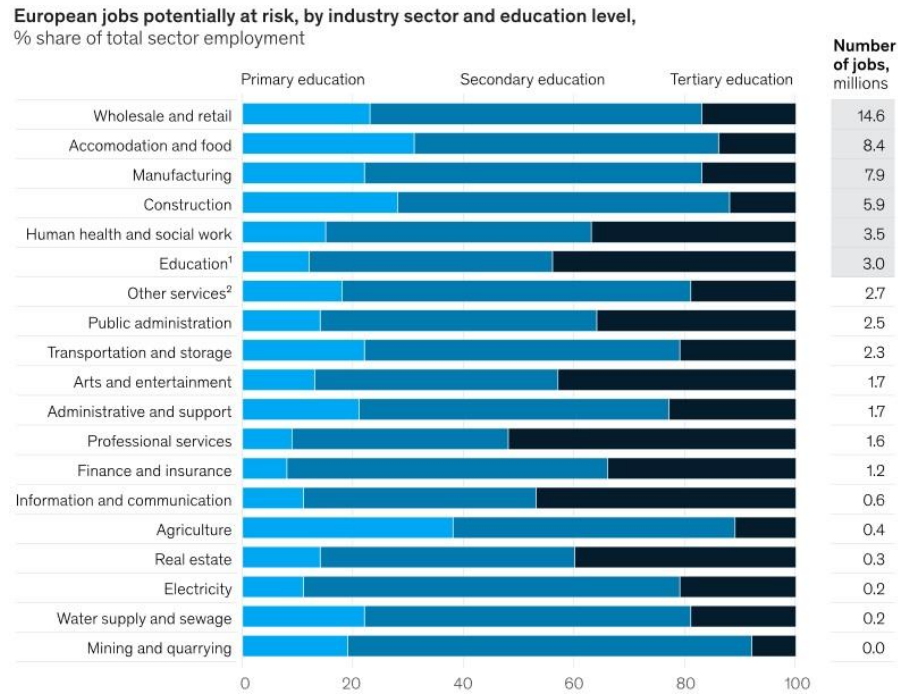
**European jobs potentially at risk, by job cluster,**
millions, % share of total cluster employment[1]

**Share of all jobs at risk, %**

0  20  40  60  80  100

58.8 million jobs at risk in Europe ... ... or a 26% share of total employment

**14.4** Customer service and sales  25%

**7.6** Food services  13%

**6.8** Building  12%

**5.3** Production  9%

**4.9** Office support  8%

**4.7** Community services  8%

**2.4** Health aides, technicians, and wellness  4%

**2.6** Mechanical installation and repair  4%

**1.7** Creatives and arts management  3%

**1.7** Management  3%

**1.4** — Business and legal  2%

**0.8** — Educator and workforce training  1%

**0.5** — STEM[2]  1%

**0.4** — Transportation services[3]  1%

**0.4** — Health professionals  1%

**0.4** — Property maintenance and agriculture  1%

**2.8** Other  5%

Note: Analysis determines jobs at risk based on physical-distancing policies and their immediate knock-on economic consequences; assumes level of physical distancing (defined by shelter-in-place policy) based on state policies. Figures may not sum to 100%, because of rounding.
[1]Age groups as provided in employment statistics by Eurostat; further differentiation not possible, because of data limitations.
Source: Eurostat; LaborCube; McKinsey analysis

**Fig. 1.** European jobs potentially at risk, by job clusters Source: (Chinn et al. 2020) [7]

Based on the education level, jobs requiring a secondary level of education are riskier than primary and tertiary education level jobs (see Figure 2).

**European jobs potentially at risk, by industry sector and education level,**
% share of total sector employment

| | Primary education | Secondary education | Tertiary education | Number of jobs, millions |
|---|---|---|---|---|
| Wholesale and retail | | | | 14.6 |
| Accomodation and food | | | | 8.4 |
| Manufacturing | | | | 7.9 |
| Construction | | | | 5.9 |
| Human health and social work | | | | 3.5 |
| Education[1] | | | | 3.0 |
| Other services[2] | | | | 2.7 |
| Public administration | | | | 2.5 |
| Transportation and storage | | | | 2.3 |
| Arts and entertainment | | | | 1.7 |
| Administrative and support | | | | 1.7 |
| Professional services | | | | 1.6 |
| Finance and insurance | | | | 1.2 |
| Information and communication | | | | 0.6 |
| Agriculture | | | | 0.4 |
| Real estate | | | | 0.3 |
| Electricity | | | | 0.2 |
| Water supply and sewage | | | | 0.2 |
| Mining and quarrying | | | | 0.0 |

Note: Analysis determines jobs at risk based on physical-distancing policies and their immediate knock-on economic consequences; assumes high level of physical distancing (defined by lockdown and shelter-in-place regulations by governments).
[1]Includes nonteaching employees in the education sector, such as administrators, childcare workers, and social workers; primary, secondary, and tertiary as well as vocational educators are considered essential occupations.
[2]Includes household employment.
Source: Eurostat; LaborCube; Moody's; Occupational Employment Statistics, US Bureau of Labor Statistics; McKinsey Global Institute analysis

**Fig. 2.** European jobs potentially at risk, by industry sector, % share of total sector employment
Source: (Chinn et al. 2020)

From the above-mentioned statistics, it is evident that jobs mostly occupied by women are the most vulnerable professions influenced by the crisis. It is not clear yet how will these jobs recover after the crisis.

Flexible working arrangements were also recognized as one of the areas with a positive impact during the monitored period from 2015 to 2019, published in McKinsey report (Huang et al. 2019) (see Figure 3).
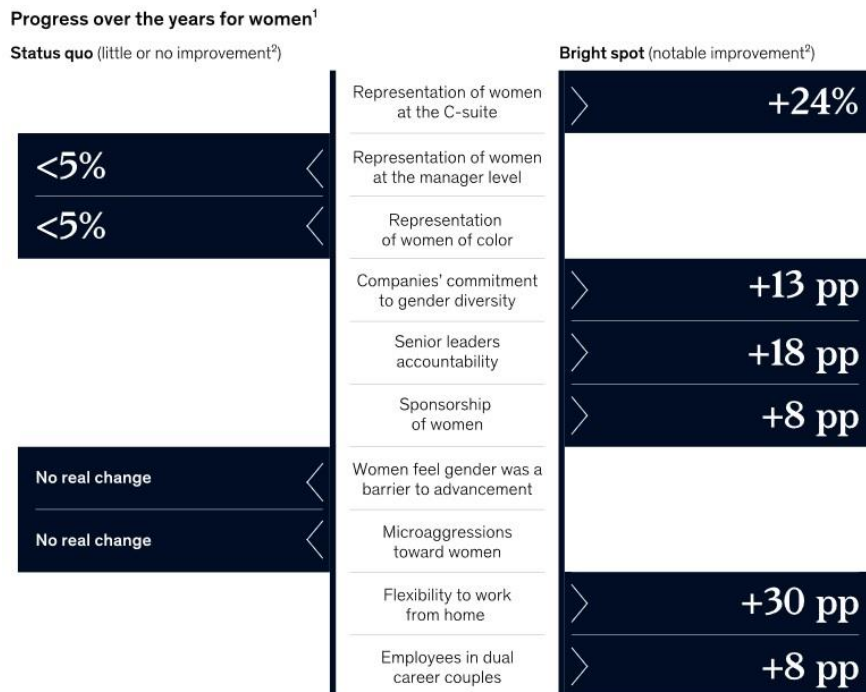
**Progress over the years for women**[1]

| Status quo (little or no improvement[2]) | | Bright spot (notable improvement[2]) |
|---|---|---|
| | Representation of women at the C-suite | +24% |
| <5% | Representation of women at the manager level | |
| <5% | Representation of women of color | |
| | Companies' commitment to gender diversity | +13 pp |
| | Senior leaders accountability | +18 pp |
| | Sponsorship of women | +8 pp |
| No real change | Women feel gender was a barrier to advancement | |
| No real change | Microaggressions toward women | |
| | Flexibility to work from home | +30 pp |
| | Employees in dual career couples | +8 pp |

**Fig. 3.** Progress over the years for women Source: (Huang et al. 2019) [8]

During the pandemic, women and men have had different experiences with working from home. According to (Rogers 2020), women find working from home to be more detrimental to their professional lives than men:

- *"Men are nearly twice as likely as women to claim the amount they are able to work from home has positively affected their career during the pandemic: 57% of men say it has been positive, while only 29% of women say the same*
- *67% of men say they have become more productive since they have been working from home during the pandemic, while 41% of women say the same*
- *Men are 2.3 times more likely to claim working from home for an extended period of time would positively affect their career progression: 71% of men said so, while only 31% of women said the same; though nearly a half of women said working from home would neither positively nor negatively affect their career, while only 20% of men held that opinion."*

In the same report (Rogers 2020), men with children at home report positive effects on their career much more frequently than women:

- *"34% of men with children at home say they have received a promotion while working remotely, while only 9% of women with children at home say the same*

- *26% of men with children at home say they have received a pay raise while working remotely, while only 13% of women with children at home say the same*
- *29% of men with children at home say they have taken on additional leadership while working remotely, while only 10% of women with children at home say the same*
- *28% of men with children at home say they have been given responsibility for important projects while working remotely, while only 10% of women with children at home say the same*
- *19% of men with children at home say they have received praise or recognition inside the company while working remotely, while only 10% of women with children at home say the same*
- *15% of men with children at home say they have received positive formal reviews while working remotely, while only 7% of women with children at home say the same."*

An interesting fact mentioned in the report (Rogers 2020) is that men were able to work from home more often than women before the pandemic:

- *"Men are more than twice as likely to say they were occasionally allowed to work from home before COVID-19: 66% of men say they could, while only 31% of women say the same*
- *The majority of men and women want more work-from-home time in the future: 71% of men say they'd like to work from home more, while 56% of women say the same."*

The COVID-19 pandemic and lockdowns around the EU and other countries caused around 50% of the workers to be working from home. In (McKinsey&Company COVID Response Center 2020), the authors stated that "Remote working is creating and exposing divides in living set-ups, divides in the ways people and organizations get work done, and divides in our individual needs for social interaction."

Based on the fact that women are working in the professions negatively affected by the COVID-19 crisis and the authors' experiences in gender diversity (Cagáňová et al. 2012, Šujanová et al. 2012, Cagáňová et al. 2012), the following research was oriented on the gender differences regarding the perception of working from home presented on Twitter.

## 2    Research method

As a research method, the authors of the paper have used qualitative analysis based on the content analysis. The authors of the paper have analysed tweets collected during ten-day period (from 29th August 2020 to 3rd September 2020). The tweets have been retrieved from Twitter according to the hashtag "#workfromhome." The collected tweets have been limited to tweets in English language.

For qualitative analysis, the authors of the paper have used MAXQDA software (MAXQDA 1995).

The authors of the paper have analysed 12,093 tweets and 599 replies. The collected data were cleaned using the MAXQDA Standard Stop list (conjunctions, prepositions, pronouns, and single letters). The second cleaning was done by eliminating strings without meaning, names, and other irrelevant words or characters.

## 2.1 Words and hashtags tweets analysis

For the basic tweet analysis, the authors of the paper have used the MAXQDA function "Analyse tweets." From this analysis, the authors of the paper obtained the most frequently used words (see Figure 4). These results were later used for the identification of relevant words for coding of the tweets. The next result achieved by applying this analysis was the list of the most frequently used hashtags (see Figure 5).



**Fig. 4.** Word frequencies of the tweets (minimum frequency 10) Source: The authors of the paper

**Fig. 5.** Hashtag frequencies of the tweets (45 most frequently used hashtags) Source: The authors of the paper

## 2.2 Text coding

To analyse the collected data, the authors of the paper have used a coding set based on the keywords: learning, training, course, skills, development career, chance, opportunity, salary, wages, payment, money, government, employers, management, independence, freedom, men, man, women, woman, diversity, equality, equal.

Coding based on the keywords was used for the selection of tweets with the content relevant to the research aim – perception on work from home.

The selection of keywords was oriented on following areas:

1. Personal development: learning, training, course, skills
2. Work position: development career, chance, opportunity
3. Payment: salary, wages, payment, money
4. Stakeholders: government, employers, management
5. Feelings: independence, freedom
6. Gender differences: men, man, women, woman, diversity, equality, equal.

The first level of coding was done by a lexical search of collected tweets, where the authors of the paper have obtained 10,244 matches.

The second level of coding focused on the content of the tweets, containing identified keywords from the first level coding.

## 2.3 Content analysis results

From the analysed tweets, around 98% have been tweets promoting companies or individuals. Most of the companies offered training in different areas like:

- Financial services
- Health services
- Marketing
- Sale
- Other trainings related to the online jobs.

Individuals preferably offered services related to the education.
Another category of the offers were services for companies related to working from home:

- General IT services
- Cyber security services
- Human resources development
- Health services related to the negative impact of the work from home.

A specific category of such services were job offers.

There has only been one organization offering special training and consulting from women – SHEROSE in India (Shah 2018). Positive reactions have been published on the opportunity given to women in IT training through the Sabio training programme (Sabio 2020).

There have also been offers for individual development:

- Time management
- Communication and presentation skills
- Online team work and collaboration
- IT training of online applications
- Work-life balance
- Fitness.

Those 2% of tweets that have not been marketing-oriented, have the authors of the paper divided to two categories:

- Positive
- Negative.

The authors of the paper have categorised the tweets presenting positive attitude of the authors as:

- Motivational: authors shared quotes to encourage others.
- Complimentary: authors expressed their gratitude to the employers and management for their attitude to the employees during the crisis.
- Knowledge sharing: in these tweets' authors shared articles and web sites related to the work from home organization (the collection of the articles is accessible at https://www.one-tab.com/page/kg9nblrEReO6rmZQa-Ie8g).
- Experience sharing: authors shared their experience as online freelancers or self-employers.
- Humour: where authors make jokes about themselves and changes in their habits.

Negative tweets have been categorised as:
- Critical: expressing negative attitude toward government regulations or company management.
- Complaints: mostly complaints related to the cuts in salaries or loss of jobs.
- Social: related to the lack of social contacts.

## 3        Conclusions

The contents of the 12,692 tweets containing #workfromhome, collected during the period from 29th August 2020 to 3rd September 2020, did not prove gender differences between in their perception on work from home. The authors of the paper have identified two good practices in supporting women in working from home: SHEROSE and Sabio. As a positive, the authors of the paper also consider that women have been encouraged to gain new IT skills, not only as graphic or text creators or editors, but also in programming. There have also been positive experiences that women share about working from home as independent self-employers.

More than 60% of positive tweets have been published by women. Women did not complain about government or management.

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